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CASE REPORT

An unusual case of fatal transection of femoral vessels

Y.P. Raghavendra Babu [a], Shabin Fahad [b], Alok Atreya [c], Shankar Bakkannavar [d,*], G.N. Pramod Kumar [e], Jenash Acharya [f]

[a] *Department of Forensic Medicine and Toxicology, Kasturba Medical College, Mangalore, Manipal University, India*
[b] *Department of General Surgery, Kasturba Medical College, Mangalore, Manipal University, India*
[c] *Department of Forensic Medicine, Manipal Teaching Hospital, Pokhara, Nepal*
[d] *Department of Forensic Medicine and Toxicology, Kasturba Medical College, Manipal, Manipal University, India*
[e] *Department of Forensic Medicine and Toxicology, Mahatma Gandhi Medical College & Research Centre, SBV University, Pondicherry, India*
[f] *Department of Forensic Medicine, Kathmandu Medical College Teaching Hospital, Kathmandu, Nepal*

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Abstract Penetrating injuries to the chest and abdomen are commonly reported in the literature. In most cases the causative agent would be a sharp knife or a metallic object. Rarely penetrating injuries can be caused by relatively blunt objects like an iron rod, pencil, glass fragments, etc. Here we report a case of accidental penetrating injury of the left groin by a glass fragment resulting in fatal transection of femoral vessels.

1. Introduction

A penetrating injury is due to mechanical force which is piercing in nature and caused by sharp-pointed objects like knives, daggers, spears, glass fragments etc. Hence penetrating injuries need not always be caused by a metallic object.[1,2] The tip of a weapon plays a vital role in a penetrating injury as objects with sharper tips penetrate the skin more readily and cause injuries in an individual.[1] These weapons cause injuries to either the major vessels in the body cavity or those passing through the major viscera of the body.[1,2] Such insults further lead to external or internal hemorrhages and may conclude in the death of the affected, if adequate and timely resuscitation is not provided. Here we report a case of death due to penetrating injury at an uncommon site due to an unusual manner of causation.

2. Case report

As per preliminary reports, on the fateful day the deceased, middle aged chronic alcoholic man, was on his way back home from his workplace at around 7.00 pm in the evening. He was carrying a bottle of alcohol tied to his waist with a lungi (a cloth that is used by men in this part of the World by tying

* Corresponding author. Tel.: +91 9845303881.
E-mail addresses: shankar.mb@manipal.edu, drvinay19@gmail.com (S. Bakkannavar).
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Figure 1 Scene of incident, inset: recreated position of bottle.

Figure 2 Penetrating wound on groin, inset: glass fragment retrieved from the scene.

around the waist). As he was trying to negotiate the stairs located adjacent to his house, he lost balance and accidently fell breaking the bottle into multiple fragments which resulted in a penetrating injury to his left inguinal region and subsequent hemorrhage (Fig. 1). Neighbors in the vicinity who witnessed the incident, came to his help and then removed the glass fragment from his body and disposed it off at the scene. Due to the remoteness of the village and lack of appropriate transport facility, four hours had passed by the time he could be shifted to nearest health care center where he was declared brought dead.

At autopsy, the deceased was an adult male of moderate build and nourishment. Dried blood stains were present over the left side of the abdomen and thighs. The body had multiple gravel abrasions, reddish brown in color, ranging from 2×1.5 cm to 0.6×0.2 cm present over the right side of the forehead, left wrist, left flank and the base of the right middle finger. A stab (penetrating) wound 3.5×0.5 cm was present over left inguinal region with contused margin which was directed above downward (Fig. 2). A visit to the scene of incidence helped us reconstruct the probable sequence of events that led to the death and recovery of a glass fragment with dried blood stains from the site. The examination of the glass fragment revealed that its dimensions were corresponding to those of the fatal external injury (Fig. 2).

Internally, all the organs were pale at the cut section and the pelvic floor showed a retroperitoneal hematoma. On blunt dissection of the left inguinal region, muscles around the stab injury were found to be contused and an incomplete transection of the left femoral artery at the level of symphysis pubis was seen (Fig. 3). The accompanying femoral vein was found to be completely severed and collapsed. Chemical analysis revealed the presence of ethyl alcohol in the viscera.

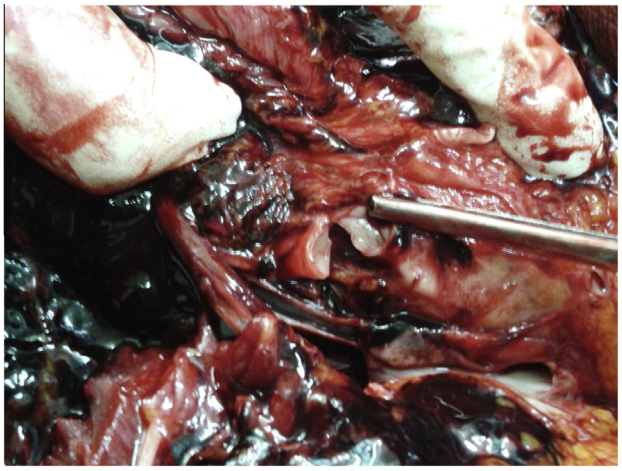

Figure 3 Near total transection of left femoral artery.

3. Discussion

Knife is the commonest object to cause a penetrating injury. The other objects which can cause penetrating injuries include ice picks, forks, pens, pencils, sharp wooden poles, scissors, screw drivers, broken glass shards (glass fragments) etc.[2] The force required for an object to produce penetration depends on the configuration and sharpness of its tip. Once the skin is penetrated, the rest of the blade or the object will slide in without much effort till it comes in contact with a bone.[2] The depth of penetration of a weapon or object required to produce a fatal wound varies depending on the area of the body and may vary from as deep as 10 cm for the abdominal aorta to as superficial as 1.3 cm for the femoral artery.[3]

A penetrating injury can be homicidal, suicidal or accidental in nature.[2] Most stabs or penetrating injuries are homicidal in nature. Homicidal wounds will be multiple, widely scattered over the body, often fail to penetrate deeply and if fatal, will involve the chest and abdomen.[2] Suicidal wounds are uncommon, usually involving the mid or left chest.[2] Such wounds are multiple in number, with many barely breaking the skin (hesitation wounds).[2] Accidental or impaling injuries are very uncommon and involve the victim falling on pointed objects, pipes, metals rods etc. or vice versa.[2]

While the most common location of a penetrating wound is the left chest region followed by the lower chest and the

abdomen, the less common areas include those of the head and the neck. It is observed that lethal wounds mostly involve trunk, head or neck.[2] It is interesting that there have been only few occasions where cases have been reported on fatal penetrating injuries to the extremities especially involving the femoral artery.[2] Although it is an uncommon site for a penetrating wound, the femoral artery is quite vulnerable to injury as it lies superficially unprotected by muscles or bony structures.[7] However, the literature search showed a case of homicidal stab injury to the right groin leading to transection of common femoral artery and subsequent ischemia[4]; a case of accidental common femoral artery and vein avulsion that resulted from a forced hip hyperextension and thigh abduction after slipping when a patient's foot became entrapped in a ladder[5]; and a suicidal case of stab of the groin resulting in injury to the femoral vessels.[6]

4. Conclusion

In the present case, we observed peculiarities at the site of injury, the manner of its causation and the nature of the wound and scene of incidence corroborated the history. The unusual site of injury (inguinal region), the absence of multiple penetrating wounds and the presence of eyewitnesses helped in ruling out the probability of homicidal attack on the deceased.

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Conflict of interest

None declared.

Ethical approval

As per the institutional ethical guidelines.

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